160*b* is identical with the code word established by the information signal portion 160*a*. The code word represented by the information signal portion 160*b*, however, is immediately followed by a sync word of which the first bit has the logical "1" value, so that now the information word having the word value "34" is established.

FIG. 12 shows by way of example, a record carrier 120 according to the invention. The record carrier shown is one of an optically detectable type. The record carrier may also be of a different type, for example, of a magnetically readable type. The record carrier comprises information patterns arranged in tracks 121. FIG. 13 shows a strongly enlarged portion 122 of one of the tracks 121. The information pattern in the track portion 121 shown in FIG. 13 comprises first sections 123, for example, in tie form of optically detectable marks and second sections 124, for example, intermediate areas lying between the marks. The first and second sections alternate in a direction of the track 125. The first sections 123 present first detectable properties and the second sections 124 present second properties which are distinguishable from the first detectable properties. The first sections 123 represent bit cells 12 of the modulated binary signal 7 having one signal level, for example, the low signal level L. The second sections 124 represent bit cells 11 having the other signal level, for example, the high signal level H. The record carrier 12 may be obtained by first generating the modulated signal and then providing the record carrier with the information pattern. If the record carrier is of an optically detectable type, the record carrier can then be obtained with mastering and replica techniques known per se based on the modulated signal 7.

FIG. 14 shows a recording device for recording information, in which the coding device according to the invention is used, for example, the coding device 140 shown in FIG. 6. In the recording device the signal line for delivering the modulated signal is connected to a control circuit 141 for a write head 142 along which a record carrier 143 of a writable type is moved. The write head 142 is of a customary type capable of introducing marks having detectable changes on the record carrier 143. The control circuit 141 may also be of a customary type generating a control signal for the write head in response to the modulated signal applied to the control circuit 141, so that the write head 142 introduces a pattern of marks that corresponds to the modulated signal.

FIG. 15 shows a reading device in which a decoding device according to the invention is used, for example, the decoding device 153 shown in FIG. 11. The reading device comprises a read head of a customary type for reading a record carrier according to the invention which record carrier carries an information pattern that corresponds to the modulated signal. The read head 150 then produces an analog read signal modulated according to the information pattern read out by the read head 150 Detection circuit 152 converts this read signal in customary fashion to a binary signal which is applied to the decoding circuit 153.

It will thus be seen that the objects set forth above and those made apparent from the preceding description are efficiently attained, and since certain changes can be made in the above method and construction set forth without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all the generic and specific features of the invention herein described and all statements of the scope of the invention, which as a matter of language, might be said to fall therebetween.

I claim

1. A record carrier having a signal recorded in a track, the signal comprising a sequence of successive information signal portions, each signal portion representing an information word wherein each of the information signal portions comprises n bit cells having a first or second signal value and wherein a plurality of track information patterns represent the signal portions, characterized in that the information signal portions are spread over at least one group of a first type and at least one group of a second type, while each information signal portion belonging to a group of the first type uniquely represents an information word and each information signal portion belonging to a group of the second type in combination with the signal values of p bit cells at predetermined positions in a following information signal portion represent a unique information word thereby allowing one information signal portion belonging to a group of the second type to represent a plurality of information words among which the respective information word is distinguishable by the signal values.

2. The record carrier as claimed in claim 1, characterized in that each number of successive bit cells having a same signal value ranges from a minimum of d+1 to a maximum of k+1, and at any arbitrary point in the signal the running value of the difference between the number of bit cells having the first signal value and the bit cells having the second signal value in the signal portion preceding this point is limited.

3. The record carrier as claimed in claim 2, characterized in that n is equal to 16, d is equal to 2 and k is equal to 10.

4. The record carrier as claimed in claim 3, characterized in that the signal comprises sync signal portions which have bit cell patterns that do not occur in the sequence of successive information signal portions, while a unique information word is established by each of the information signal portions of the second group combined with either an adjacent sync signal portion or an adjacent information signal portion.

5. The record carrier as claimed in claim 2, characterized in that the signal comprises sync signal portions which have bit cell patterns that do not occur in the sequence of successive information signal portions, while a unique information word is established by each of the information signal portions of the second group combined with either an adjacent sync signal portion or an adjacent information signal portion.

6. The record carrier as claimed in claim 2, characterized in that the information signal portions from the at least one group of the first type end in s bit cells having a first same signal value, and in that the information signal portions from the at least one group of the second type end in t bit cells having a same second signal value, wherein s and t can assume different values and wherein s and t are different in value.

7. The record carrier as claimed in claim 2, wherein the track information patterns comprise first and second parts alternating in the direction of the track, the first parts presenting detectable first properties and the second parts presenting second properties distinguishable from the first properties, and wherein the parts having the first properties represent bit cells having the first signal value and the parts having the second properties represent the bit cells having the second signal value.

8. The record carrier as claimed in claim 1, characterized in that the signal comprises sync signal portions which have

bit cell patterns that do not occur in the sequence of successive information signal portions, while a unique information word is established by each of the information signal portions of the second group combined with either an adjacent sync signal portion or an adjacent information signal portion.

9. The record carrier as claimed in claim 8, characterized in that the information signal portions from the at least one group of the first type end in s bit cells having a same first signal value, and in that the information signal portions from the at least one group of the second type end in t bit cells having a same second signal value, wherein s and t can assume different values and wherein s and t are different in value.

10. The record carrier as claimed in claim 8, wherein the track information patterns comprise first and second parts alternating in the direction of the track, the first parts presenting detectable first properties and the second parts presenting second properties distinguishable from the first properties, and wherein the parts having the first properties represent bit cells having the first signal value and the parts having the second properties represent the bit cells having the second signal value.

11. The record carrier as claimed in claim 1, characterized in that p is equal to 2.

12 The record carrier as claimed in claim 1, characterized in that the information signal portions from the at least one group of the first type end in s bit cells having a first same signal value, and in that the information signal portions from the at least one group of the second type end in t bit cells having a same second signal value, wherein s and t can assume different values and wherein s and t are different in value.

13. The record carrier as claimed in claim 12, characterized in that t is greater than or equal to 2 and smaller than or equal to 5.

14. The record carrier as claimed in claim 12, wherein the track information patterns comprise first and second parts alternating in the direction of the track, the first parts presenting detectable first properties and the second parts presenting second properties distinguishable from the first properties, and wherein the parts having the first properties represent bit cells having the first signal value and the parts having the second properties represent the bit cells having the second signal value.

15. The record carrier as claimed in claim 1, wherein the track information patterns comprise first and second parts alternating in the direction of the track, the first parts presenting detectable first properties and the second parts presenting second properties distinguishable from the first properties, and wherein the parts having the first properties represent bit cells having the first signal value and the parts having the second properties represent the bit cells having the second signal value.

16. The record carrier as claimed in claim 15, wherein said properties are optically detectable.

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